L 46010-66

ACC NR: AR6029454

⏤ maps.  A regional subdivision is made of the territory from the point of view of natural gas and petroleum deposits.  A. Titkov.  [Translation of abstract]    [SP]

SUB CODE: 08/

Card 2/2

*C. h A ʃ  K H,  V. K h.*

AUTHOR:         Ministerstvo tyazhelogo mashinostroyeniya SSSR.
                Tekhnicheskiy otdel

                                        Call Nr:  TN 705.R8

TITLE:          Metallurgical Equipment (Metallurgicheskoye oborudovaniye)

PUB. DATA:      Gosudarstvennoye nauchno-tekhnicheskoye izdatel'stvo
                mashinostroitel'noy literatury, Moscow, 1947, Part III,
                299 pages, 4,000 copies

ORIG. AGENCY:   Ministerstvo tyazhelogo mashinostroyeniya SSSR

EDITOR:         Fustanovich, V.A.; Scientific Editor: Tselikov, A.I.;
                Compilers of Part III: Revin, I.A.; Chayka, V.Kh.

PURPOSE:        The purpose of this publication is to acquaint a wide
                circle of engineers, technicians, planners, etc., connected
                with metallurgical plants, of machine designers and pro-
                duction engineers, as well as the students of higher and
                other technical schools, with the design and types of

Card 1/5

Call Nr: TN 705.R8

Metallurgical Equipment (Cont.)

metallurgical equipment produced under the authority
of the Ministry of Heavy Machinery Construction.

COVERAGE:

This book has a dual function, being both a catalog and
a reference book. It lists, according to a generalized
and systematic scheme, the basic assortment of equipment
produced by plants of the Ministry, as well as the
engineering data on 347 types of machinery and automatic
equipment of standard size, and found satisfactory in
operation as based on the production records for the
years preceding World War II of the Soviet plants
which are listed below. The present volume is Part III
of a three-part publication, whose separate sections deal
with the following equipment: I, Crushing and Grinding,
Sinterting, Blast-Furnace and Steelmaking Equipment;
II, Cranes for Metallurgical Plants and For Special
Purposes; Mechanical Equipment for Coking Plants;
III, Rolling-Mill and Auxiliary Rolling-Mill Equipment.

Card 2/5

Call Nr:  TN 705.R8

Metallurgical Equipment (Cont.)

The book contains the following information on each
listed item: A general layout giving the principal
dimensions; a brief description; the principal technical
performance data; the basic weight data and, for the
sake of orientation, the basic data on the electric
motors. No personalities are mentioned in the Preface.
The facilities which are mentioned follow: Metallurgical
equipment plants: Uralmashzavod im. Ordzhonikidze;
the Novo-Kramatorskiy Plant im. Stalin (in Kramatorsk);
the Staro-Kramatorskiy Plant im. Ordzhonikidze; the
Novo-Kramatorskiy Plant im. Stalin (in the town of
Elektrosal'); the Irkutsk Machine Construction Plant im.
Kuybyshev; There are no references.

Card 3/5

Call Nr:  TN 705.R8

Metallurgical Equipment (Cont.)

## TABLES OF CONTENTS

Preface

Part I. Rolling Mills and Basic Rolling-Mill Equipment

    Specifications for rolling mills and rolling-mill equipment produced by plants of the Ministry of Heavy Machinery Construction

    Rolling mills

    Main lines of rolling mills

    Operating stands of rolling mills

    Geared stands and universal spindles for rolling mills

    Liquid-friction bearings for rolling mills

Card 4/5

Call Nr:  TN 705.R8

Metallurgical Equipment (Cont.)

Part II. Auxiliary Rolling-Mill Equipment

      Specifications for auxiliary rolling-mill machinery and
      mechanisms produced by plants of the Ministry of Heavy
      Machinery Construction

      Auxiliary Finishing machines for rolling mills
      Auxiliary transfer machines and mechanisms for rolling mills

AVAILABLE:     Library of Congress

Card 5/5

VOTAKH, O.A.; CHAYKA, V.M.

Rhythmical succession of forms of stromatolites in the
ancient Turukhansk complex. Dokl.AN SSSR  145  no.1:154-156
Jl '62.                                              (MIRA 15:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.
Predstavleno akademikom A.A.Trofimukom.
        (Turukhansk region--Stromatolites)

CHAYKA, V. M.; KAZAK, A. P.; MIROSHNIKOV, A. Ye.

Zones of principal deformations in the structure of the Southern Urals. Sov. geol. 5 no.10:120-126 O '62.    (MIRA 15:10)

1. Orenburgskoye geologicheskoye upravleniye.

(Ural Mountains—Geology, Structural)

CHAYKA, V.M.

Methods of studying metamorphic rocks.  Geol. i geofiz. no.12:71-78
'62.                                                    (MIRA 16:3)

1. Krasnoyarskaya kompleksnaya geologicheskaya laboratoriya Instituta
geologii i geofiziki Sibirskogo otdeleniya AN SSSR.
(Ural Mountains--Rocks, Crystalline and metamorphic)     (Zircon)

KLYAROVSKIY, V.M.; CHAYKA, V.M.

New data on the correlation and age of Devonian series in the
Igarka-Turukhan region. Geol. i geofiz. no.8:119-123  '64
                                                    (MIRA  18:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,
Novosibirsk.

CHAYKA, V.M.; KHAYRETDINOV, I.A.; ZABIYAKA, A.I.; BARKHINA, A.A.

Detrital accessories and the petrogenesis of granites in the
Yenisey Range. Geol. i geofiz. no.12:134-140 '64.

(MIRA 18:6)

1. Krasnoyarskaya kompleksnaya laboratoriya Sibirskogo otdeleniya
AN SSSR.

CHAYKA, V.M.

Are the Ay-suite metamorphosed conglomerates really basalt
formations of the Southern Urals? Sov. geol. 8 no.3:115-118
'65.
(MIRA 18:5)

1. Krasnoyarskaya kompleksnaya geologicheskaya laboratoriya.

L 22045-66   EWT(1)/EWT(m)/EWP(j)/ /EWP(v)/EWA(h)   IJP(c)   WW/RM

ACC NR: AP6009591 (N)  SOURCE CODE:  UR/0256/65/000/010/0059/0061

AUTHOR: Chayka, V. M. (Engineer, Captain); Tiunov, P. A. (Captain)

ORG: None

TITLE: Repair of insulated cables _25

SOURCE: Vestnik protivovozdushnoy oborony, no. 10, 1965, 59-61

TOPIC TAGS: electric engineering, high voltage line, communications wire, electric cable, insulated wire, soldering/GTSh-3Khl insulated wire

ABSTRACT: After reviewing various active agents (ozone, surges, etc.) causing deterioration of cable insulation, the authors describe in detail the procedures used for repairing high-voltage rubber-covered cables of GTSh type. The repairs were made under military field conditions on cables laid on supports in trenches. The max. span between supports was 80 cm. Safety measures to be taken in handling high-voltage cables and in removing the damaged cable section were briefly discussed. Methods of forming new joints by skinning, twisting and soldering wires were explained. Split copper cable connecting sleeves of GM type could also be used. Soldering

Card 1/2

L 22045-66                                                                4

ACC NR:  AP6009591

pastes of POS-18 and POS-30 types were employed. New wire joints
were wrapped with PI-35 and TSSh-30 tapes to the thickness of the
insulation on the original wires. Then, the entire restituted con-
nection was wrapped with three layers of TSSh-30 rubber tapes and one
cotton tape layer. Vulcanization of the connection was recommended.
Ground wires were reconnected without soldering. Overall protection
was formed by a layer of cotton tape and three or four layers of
ShVP-50 rubber tape. Vulcanization was applied again. The amount of
various materials used for repairing the GTSh-3Kh6 cable was given.

SUB CODE:  09,13/ SUBM DATE:  None / ORIG REF:  000 / ORIG REF:  000

Card 2/2

CHAYKA, V.V., inzh.; FILIMONOVA, Ye.K.

Vacuum drying of knife-cut veneer. Der. prom. 6 no.9:21 S '57.
(MIRA 10:11)

1. Saratovskiy derevoobrabatyvayushchiy kombinat.
(Veneers and veneering) (Drying apparatus)

CHAYKA, V.V., doktor med.nauk; SHERMAN, S.G., starshiy nauchnyy sotrudnik

Functional evaluation of a system of respiration in tuberculosis patients working in cotton thread spinning plants. Vrach.delo no.5: 541 My '59.                                                    (MIRA 12:12)

1. Leningradskiy nauchno-issledovatel'skiy institut tuberkuleza.
          (RESPIRATION)              (TUBERCULOSIS)

CHAYKA, V.V., doktor med.nauk

Importance of function tests and some controversial problems in the functional diagnosis of disorders of the respiratory apparatus in clinical tuberculosis. Probl.tub. 37 no.6:78-83 '59. (MIRA 13:2)

1. Iz Leningradskogo instituta tuberkuleza (direktor - prof. A.D. Semenov).
(TUBERCULOSIS PULMONARY physiol.)

SEMENOV, A.D., prof., otv. red.; GOL'DSHTEYN, M.M., prof. red.;
ZARNITSKAYA, B.M., red.; ZARNITSKAYA, B.M., starshiy nauchn.
sotrudnik, red.; KUZNETSOVA, S.M., red.; RABINOVICH, A.M.,
prof., red.; CHAYKA, V.V., doktor med. nauk, red.; ZAGRA-
NICHNYY, B., tekhn. red.

[Transactions of the Leningrad Tuberculosis Research
Institute; problems in the clinical aspects of tubercu-
losis] Voprosy kliniki tuberkuleza; trudy instituta. Le-
ningrad, 1960.  272 p.                               (MIRA 14:5)

1. Lehingrad. Leningradskiy nauchno-issledovatel'skiy institut.
2. Rukovoditel' podrostkovogo otdeleniya Leningradskogo gosu-
darstvennogo nauchno-issledovatel'skogo instituta tuberkuleza
(for Goldshteyn). 3. Rukovoditel' fizioterapevticheskogo otde-
leniya Leningradskogo gosudarstvennogo nauchno-issledovatel'-
skogo instituta tuberkuleza (for Zarnitskaya). 4. Rukovoditel'
rentgenologicheskogo otdeleniya Leningradskogo gosudarstven-
nogo nauchno-issledovatel'skogo instituta tuberkuleza (for Ra-
binovich). 5. Rukovoditel' laboratorii klinicheskoy fiziologii
Leningradskogo gosudarstvennogo nauchno-issledovatel'skogo in-
stituta (for Chayka)
                        (TUBERCULOSIS)

CZAJKA, V.V.

SEMENOV,A.D.; CZAJKA, W.W. (Leningrad, ZSSR)

Some functional aspects of pulmonary tuberculosis in various modes of therapy. Gruzlica 31 no.6:545-547   Je'63.

KALMYKOV, P.P., inzh.; CHAYKA, V.V., inzh.

Four-roller polishing machine. Der. prom. 14 no.4:27  Ap '65.
(MIRA 18:5)

1. Saratovskiy mebel'nyy kombinat.

ANDRUSHENKO, L.M.; CHAYKA, V.Ye.

      Matching devices for ridge-type delay systems.  Izv.vys.ucheb.
      zav.; radiotekh. 5 no.6:736-737 N-D '62.      (MIRA 16:1)

      1. Rekomendovano Institutom  radiotekhnicheskikh problem
      AN UkrSSR.
                    (Microwaves)     (Delay lines)

CHAYKA, Ye., kapitan dal'nego plavaniya

A ship captain's handbook is needed. Mor. flot 23 no.7:42
Jl '63.                                        (MIRA 16:8)

CHAYKA, Ye.I.

KISELEVA, A.F. (Kiyev); CHAYKA, Ye.I., professor, saveduyushchiy.

Cardiac receptors in hypertension. Arkh.pat. 15 no.4:22-26 Jl-Ag '53.
(MIRA 6:11)

1. Kafedra patologicheskoy anatomii Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta im. akad. Bogomol'tsa.
(Heart) (Hypertension)

CHAYKA, Ye.I.

BYALIK, V.L., dotsent; RABINER, P.S., kandidat meditsinskikh nauk; CHAYKA,Ye.I.,
professor, zaveduyushchiy; GORODINSKIY, B.M., professor, direktor.

Malignant hemangioendothelioma of the liver and spleen.  Klin.med. 31 no.8:
82-85 Ag '53.
(MIRA 6:11)

1. Kafedra patologicheskoy anatomii Kiyevskogo ordena Trudovogo Krasnogo
Znameni meditsinskogo instituta im. akad. A.A.Bogomol'tsa.(for Chayka).
2. Khirurgicheskaya klinika Kiyevskogo ordena Trudovogo Krasnogo Znameni
meditsinskogo instituta im. akad. A.A.Bogomol'tsa (for Gorodinskiy).
(Liver--Tumors) (Spleen--Tumors)

ALEKSEYENKO, I.P., dotsent, redaktor; SHAMRAY, Ye.F., professor, redaktor; CHAYKA, Ya.L., professor, redaktor; MAN'KOVSKIY, B.N., professor, redaktor; CHERKES, A.I., professor, redaktor; PRIMAK, F.Ya., professor, redaktor; LIKHTENSHTEYN, Ye.I., dotsent, redaktor; FROL'KIS, V.V., dotsent, redaktor; GLUZMAN, F.A., redaktor; LOKHMATYY, Ye.G., tekhnicheskiy redaktor

[Pathology of the cardiovascular system in clinical treatment and experiment] Patologiia serdechno-sosudistoi sistemy v kliniki i eksperimente. Kiev, Gos. med. izd-vo USSR, 1956. 241 p. (MLRA 10:2)

1. Kiyev. Meditsinskiy institut imeni A.A.Bogomol'tsa. 2. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Man'kovskiy) 3. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Cherkes)
    (CARDIOVASCULAR SYSTEM--DISEASES)

CHAYKA, Ye.I., prof.

"Outlines of vascular permeability" ed. by V.N.Mogil'nitskii.[chlen-korrespondent AMN SSSR, deceased]. Reviewed by E.I.Chaika. Arkh.pat.
19 no.8:84-86 '57.

(BLOOD VESSELS)     (MOGIL'NITSKII, V.N.)     (MIRA 10:12)

CHAYKA, Ye.I.

Aleksandra Ivanovna  Smirnova-Zamkova  Arkh. pat. 22 no. 8:94-95
'60.
(SMIRNOVA-ZAMKOVA, ALEKSANDRA IVANOVNA)    (MIRA 14:1)

27.1140

40666
S/238/62/008/003/006/008
1015/1215

AUTHOR:    Chayka, Ye. I. and Kozachuk, Yu. S.

TITLE:    Age-dependent effect of aminazine on morphologic changes in the central and peripheral nervous system

PERIODICAL:    Fiziolohichnyy zhurnal, v. 8, no. 3, 1962, 368-374

TEXT:    This is a continuation of previous studies. Experiments were carried out on 15 puppies, 12 days – 1.5 months old, and 10 adult dogs. The aminazine dose varied from 2.5 to 10.0 mg/kg b.w. Puppies which received 10.0 mg/kg b.w. aminazine were sacrificed after 7–12 days. All of them showed marked degenerative changes in CNS cells and peripheral ganglia. These changes corresponded to those evoked by a dose of 20.0 mg/kg b.w. in adult dogs. No characteristic changes for hypothermia (depletion of glycogen, fatty liver) were found in the internal organs. A dose of 5 mg/kg b.w. aminazine brought about degenerative changes in nerve cells, including focal cytolysis. A dose of 2.5 mg/kg b.w. aminazine caused only chromatolysis in puppies. Puppies were less tolerant to aminazine than adult dogs but they endured hibernation much better Repeated administration of aminazine to puppies brought about the same changes as a single dose. The question is raised whether to call the adminstration of neuroleptic drugs "artificial hibernation." There are 3 figures.

Card 1/2

Age-dependent effect of aminazine on morphologic changes in...          S/238/62/008/003/006/008
                                                                        1015/1215

ASSOCIATION: Kafedra patolohichnoy anatomii Kiyevs'koho medychnoho instytutu im. akad. O. O.
             Bohomol'tsya (Chair of Pathologic Anatomy, Kiev Institute of Medicine im. Acade-
             mician O. O. Bohomolets)

SUBMITTED:   October 1, 1960

Card 2/2

CHAYKA, Ye.I. [Chaika, IE.I.]; KOZACHUK, Yu.S.

Morphological changes in the central and peripheral nervous
systems under the influence of aminazine depending on age.
Fiziol. zhur. [Ukr.] 8 no.3:368-374 My-Je '62.    (MIRA 15:6)

1. Kafedra patologicheskoy anatomii Kiyevskogo meditsinskogo
instituta im. akad. A.A. Bogomol'tsa.
              (NERVOUS SYSTEM)    (CHLORPROMAZINE)

CHAYKA, Ye.I. [Chaika, IE.I.]

The creative way of Oleksandra Ivanivna Smyrnova-Zamkova. Fiziol.zhur.
[Ukr] 9 no.3:377-382 My-Je '63. (MIRA 18:1)

1. Kiyevskiy meditsinskiy institut im. akademika Bogomol'tsa.

CHAYKA, Ye.I.,zasluzhennyy deyatel' nauk, prof. (Kiyev)

"Coronary circulation of the blood and experimental myocar-
dial infarct" by V.V.Frol'kis and others. Reviewed by E.I.
Chaika. Vrach. delo no.11:152-153 N'63     (MIRA 16:12)

BRATUS', V.D., prof. red.; ZAYKO, N.N., prof. red.; MAN'KOVSKIY,
K.B., prof., red.; PRIMAK, F.Ya., prof.red.; SPIROV,
M.S., prof.red.; FRUMKIN, Ya.P., prof. red.; CHAYKA
Ye.I., prof. red.; CHERNYSHENKO, L.V., red.; SOLOGUB,
P.Ya., red.

[Physiology and pathology of connective tissues] Fiziolo-
giia i patologiia soedinitel'noi tkani.  Kiev, Zdorov'ia,
1964.  251 p.                        (MIRA 18:1)

1. Kiev. Medychnyy instytut.

CHAYKA, Ye. N.:

CHAYKA, Ye. N.: "The development of innervation connections in the organs of the pelvis minor in man after birth". Minsk, 1955. Minsk State Medical Inst. (Dissertations for the Degree of Candidate of Medical Sciences.)

So. Knizhnaya letopis'. No. 49, 3 December 1955. Moscow.

CHAYKA, Ye.N.

Development of neural connections of organs of the lesser pelvis
in man after birth. Vop.morf. perif. nerv. sist. no.3:114-131 '56
(MIRA 11:12)

(PELVIS--INNERVATION)

GOLUB, D.M.; GRISHAN, K.I.; CHAYKA, Ye.N.

Postfetal development of the sympathetic nervous system under
normal and pathological conditions. Zdrav.Belor.  4 no.3:18-23
Mr '58.                                                      (MIRA 13:7)

1. Iz kafedry normal'noy anatomii (zaveduyushchiy - chlen-korres-
pondent AN BSSR professor D.M. Golub) Minskogo meditsinskogo
instituta.
                (NERVOUS SYSTEM, SYMPATHETIC)

CHAYKA, Ye.N.

CHAYKA, Ye.N., BLYUMKIN, V.P., PETROVA, R.M.

First White Russian Conference of Morphologists. E.N. Chaika,
V.P. Bliumkin, R.M. Petrova. Arkh.anat.gist. i embr. 35 no.2:106-112
Mr-Ap '58                                          (MIRA 11:5)
          (NERVOUS SYSTEM)

CHAYKA, Ye.N.

Development of nerve cells of the pelvic plexus in man.  Vop. morf.
perif. nerv. sist. no.5:83-94 '60.                    (MIRA 14:3)
                    (PELVIS—INNERVATION)

CHAYKA, Ye.N.

Development of the nerve cells of the vegetative ganglia
in animals irradiated with X-rays at early stages of ex-
trauterine life. Zdrav. Bel. 8 no.6:35-38 Je'62.(MIRA 16:8)

1. Iz kafedry normal'noy anatomii (zav. - akademik AN BSSR
D.M.Golub) Minskogo meditsinskogo instituta.
        (RADIATION—PHYSIOLOGICAL EFFECT)    (NERVES)

CHAYKA, Ye.N.

Effect of pathological processes on the development of the neural elements of the pelvic plexus in man. Vop. morf. perif. nerv. sist. no.6:192-202'63.          (MIRA 16:10)
     (PELVIC PLEXUS)  (PHYSIOLOGY, PATHOLOGICAL)

34045
S/109/62/007/001/026/027
D201/D301

$9,4310$

AUTHORS:       Chayka, Yu.D., and Shats, S.Ya.

TITLE:       The shortest time in which a transistor can go out of
saturation

PERIODICAL:   Radiotekhnika i elektronika, v. 7, no. 1, 1962,
177 - 181

TEXT:  In the present short communication the authors consider the
shortest time in which a transistor can go out of saturation and
the dependence of this time on currents flowing through the transis-
tors. Considering the carrier distribution in the base region, the
problem is equivalent to that of evaluating the minimum time requi-
red for the density of excess carriers at the collector junction to
fall to zero level, together with determining the boundary condi-
tions at which this minimum can be realized and the solution of dif-
fusion equation at given boundary conditions. Considering the boun-
dary conditions the minimum time is achieved by a step change of
emitter junction carrier density, the diffusion time in this case

Card 1/4

34045

The shortest time in which a ...

being determined only by the intrinsic speed of the diffusion process. Assuming the following: 1) The process of diffusion is described by a purely diffusion equation; 2) The emitter and collector efficiencies are equal to unity; 3) The life time of minority carriers is infinitely great; 4) The diffusion occurs as a steady state process, the problem is reduced to solving

$$\frac{\partial^2 p}{\partial x^2} = \frac{1}{D_p} \frac{\partial p}{\partial t} \qquad (2)$$

with initial distribution of minority-carriers

$$p(x, 0) = p(0, 0) \left[1 - \frac{x}{W} + \frac{p(W, 0)}{p(0, 0)} \frac{x}{W}\right] \qquad (3)$$

and boundary conditions

$$p(0, t) = 0; \quad \frac{\partial p}{\partial x}(W, t) = \frac{j_c + j_{c.0}}{qD_p}; \quad t \geqslant 0 \qquad (4)$$

in which $j_c$ — collector junction current density during the initial

Card 2/4

The shortest time in which a ...

saturation state; $j_{c.o}$ - the increase of current density due to application of cut-off voltage. The solution of Eq. (2) results in

$$T = \tau \ln \frac{4}{\pi} \frac{I_{ca} + \frac{2}{\pi} I_{c.o}}{I_c + I_{c.o}}, \qquad (13)$$

in which $I_{ca}$ is the collector current corresponding to the actual active operating current and $\tau$ is the dissipation time parameter. The results of experiments show the following: 1) The voltage step at the collector of a saturated transistor, after the emitter junction has been cut off, is in the common emitter configuration equal to the cut-off voltage; 2) Eq. (13) reflects quite well the effect of various factors affecting the duration of saturation; 3) The use of Eq. (13) is limited by the region of saturation at which the base current does not exceed the collector current by more than 2-3 times. Eq. (13) is also stated to be valid provided $\tau$ is taken as a geometrical mean of times $\tau_1$ and $\tau_2$ of the direct and reverse voltage response time of the transistor. There are 2 tables, 4 figures

Card 3/4

The shortest time in which a ...

and 5 Soviet-bloc references.

SUBMITTED:    April 14, 1961

34045
S/109/62/007/001/026/027
D201/D301

Card 4/4

L 13563-65        AFWL/ASD(a)-5
ACCESSION NR: AP4046687                    S/0109/64/009/010/1854/1860

AUTHOR: Chayka, Yu. D.; Shats, S. Ya.

TITLE: Effect of the injection level on the common-emitter frequency cutoff in transistors

SOURCE: Radiotekhnika i elektronika, v. 9, no. 10, 1964, 1854-1860

TOPIC TAGS: transistor, transistor frequency, transistor frequency cutoff

ABSTRACT: The effects of recombination phenomena, majority-carrier leakage through the emitter, excess charge in the base, etc., upon the cutoff frequency, at medium and high injection levels, are considered. It is established, on the basis of theoretical and experimental data, that the recombination rate is principally responsible for the nonmonotonous dependence of the cutoff frequency on the injection level. A comprehensive formula for the cutoff frequency is developed from the findings of W. Wester (Proc. IRE, 1954, 42, 6, 914),

Card 1/2

L 13563-65
ACCESSION NR: AP4046687

N. Fletcher (Proc. IRE, 1956, 44, 10, 1475), and A. Matz (Proc. IRE, 1958, 46, 3, 616); the formula is analyzed, and results are compared with some experimental data obtained from p-n-p and n-p-n transistors. Curves of the cutoff frequency vs. collector current, for 20, 50, and 60C, are presented. Orig. art. has: 2 figures and 35 formulas.

ASSOCIATION: none

SUBMITTED: 06Jul63                                    ENCL: 00

SUB CODE: EC                  NO REF SOV: 007          OTHER: 005

Card 2/2

GORBUNOV, N.; CHAYKA, Z.

After the reorganization. Mast.ugl. 9 no.10:8 O'60.

(MIRA 13:10)

(Ukraine--Strip mining)

GORBUNOV, N.; VOLKOV, G.; CHAYKA, Z.

Increasing labor productivity in open-cut coal mines.  Biul.nauch.
inform.:trud i zar.plata  3   no.9:3-7  '60.            (MIRA 13:9)
           (Strip mining--Labor productivity)

CHAYKA, Z. A. Cand Agr Sci -- (diss) "Varieties of rice and characteristics of

their cultivation in the Volga-and-Akhtuba bottom land and the Volga delta."

Novocherkassk, 1957.  15 pp 20 cm. (Min of Higher Education, USSR, Novocherkassk

Engineering and Improvement Inst), 110 copies (KL, 14-57, 87)

-27-

CHAYKA, Z.A., kand.sel'skokhozyaystvennykh nauk (Rostov-na-Donu)

Improve the efficiency of irrigation farming in the lower Don
Valley. Gidr.i mel. 12  no.2:6-9  F '60.            (MIRA 13:6)
        (Don Valley--Irrigation farming)

CHAYKA, Z.A., kand.sel'skokhozyaystvennykh nauk; ANDREYEV, P.P., kand.
ekonomicheskikh nauk

Irrigation and water supply as great possibilities for increasing
the output of livestock produce. Zhivotnovodstvo 23 no.5:9-15
My '61.                                           (MIRA 16:2)

        (Rostov Province—Irrigation farming)

CHAYKA, Z.S.

Potentials for increasing labor productivity in open-pit mines.
Gor. i ekon. vop. rasrab. ugol'. i rud. mest.  no.1:363-367  '6ᵬ.
(MIRA 16:7)
(Raychikhinsk region--Strip mining--Labor productivity)

CHAYKAUSKAS, Vl. M.:  Master Agric Sci (diss) -- "The feeding area of the sugar

beet under the conditions of the Lithuanian SSR".  Kaunas, 1959.  22 pp

(Min Agric USSR, Lithuanian Agric Acad), 130 copies (KL, No 13, 1959, 110)

KUPCHINSKAS, Yu.K., prof. [Kupcinskas, J.]; CHAYKAUSKENE, Yu.D.
[Caikauskiene, J.]

Tomography of the joints in the diagnosis of infectious
nonspecific polyarthritis. Vop. revm. 3 no.4:35-38  O-D
'63.                                          (MIRA 17:2)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. Yu.K.
Kupchinskas) i kafedry rentgenologii i radiologii (zav. -
dotsent P.K. Yashinskas [Jasinskas, P.]) kaunasskogo meditsinskogo
instituta.

VDOVENKO, V.M.; BELOV, L.M.; CHAYKHORSKIY, A.A.

Complex formation in nonaqueous solutions. Radiokhimiia 1 no.4:
439-444 '59.                                    (MIRA 13:1)
                (Complex compounds)

AUTHORS:      Vdovenko, V. M.; Yefimova, K. I.; Chaykhorskiy, A. A.

TITLE:        An investigation of the complex-formation in non-aqueous solutions
              II. The system water-butylacetate-benzene.

PERIODICAL:   Radiokhimiya, v. 2, no. 6., 1960, 675 - 681

TEXT:         The authors deal with the method for determining the hydration
number of the extracted substance in the organic and water phase on the example
of the water-butylacetate-benzene system. The possibility is shown by using the
general distribution equation in a slightly different form for this purpose.
The experimental investigation of the interaction of n-butylacetate with water
in an aqueous solution and benzene medium within the range of the butylacetate
concentration of up to 0.72 M (10 %) showed that butylacetate forms with water
molecular compounds of the BA · H$_2$O composition at an equilibrium constant equal
to 0.99 ± 3 % in benzene and aqueous solutions within the given range. The ex-
perimental results were checked by the general distribution equation:

Card 1/3

An investigation of the complex-formation ...

$$a_0 = \frac{C_0}{C_W^n} \quad (1) \text{ and changed to} \quad a_0 = \frac{C_0^p f_0^p}{C_W^q f_W^q} \quad (2)$$

where $C_0$ and $C_W$ are the concentrations of the distributed substance in the organic and water phases, $f_0$ and $f_W$ the corresponding activity coefficients, p and q the degrees of polymerization of the distributed substance in the organic and water phases. It is assumed that if water forms compounds in both phases with butyl-acetate, then their compositions would be: in the organic phase: BA · $(H_2O)_2$, in the aqueous phase BA · $(H_2O)_2$. The activity of water in salt solutions was also calculated from table data of osmotic coefficients (Ref. 4: R. A. Robinson, R. H. Stokes. Trans Farad. Soc., 45, 7, 612, 1949 and Ref. 5: R. H. Stokes, Trans. Farad. Soc. 44, 5, 295, 1948). The activity coefficients in the organic phase was calculated from the formula:

$$f_0 = \frac{\alpha_0 \alpha_{(H_2O)_W}}{[H_2O]_0} \quad (5)$$

Card 2/8

An investigation of the complex-formation ....

where $f_0$ is the average activity coefficient of water in the organic phase, $a_{(H_2O)_W}$ the water activity in the aqueous solution, $[H_2O]_0$ the water concentration in the organic phase, $a_0$ the coefficient of (thermodynamic) distribution of water between benzene and water equal to $5.56 \cdot 10^{-4}$. The activity of water in benzene solutions containing 0.216, 0.360, 0.504 and 0.720 M butylacetate was determined in a similar manner. The degree of polymerization of water in the aqueous and benzene phases is the same. These data led to the conclusion that water forms a compound with butylacetate containing one water molecule: in the organic phase $(BA)_x \cdot H_2O$, in the water phase $(BA)_y \cdot H_2O$. Since this conclusion is considered only qualitative, an investigation of the chemical equilibrium taking place in the water and organic phases was made. Assuming that the increase in the water solubility in benzene with an increase of the butylacetate concentration is associated with the formation of the compound $(BA)_n(H_2O)_m$, the following equation is derived:

$$K_0 = \frac{\frac{1}{m}\left(\Sigma H_2O - [H_2O]_0\right)}{[H_2O]_0^m \left[\Sigma BA - \frac{1}{m}\left(\Sigma H_2O - [H_2O]_0\right)\right]^n} \qquad (6)$$

Card 3/8

where $\Sigma H_2O$ and $[H_2O]_0$ are the general and equilibrium concentrations of water in the organic phase, $\Sigma$ BA is the general concentration of butylacetate in the organic phase, n and m is the number of molecules of the components, constituting part of the complex. After transformation and taking the logarithm of (6) for the value of n=1·

$$\lg (\Sigma H_2O - [H_2O]_0) = \lg \Sigma BA + \lg \frac{m\, K_0 [H_2O]_0^m}{1 + K_0 [H_2O]_0^m} \tag{7}$$

from where the function is derived:

$$\varphi = \frac{\Sigma H_2O - [H_2O]_0}{\Sigma BA} = \frac{m\, K_0 [H_2O]_0^m}{1 + K_0 [H_2O]^m} = \text{const.} \tag{8}.$$

At n = 1 the function is a constant value. A method is derived for determining the number of hydration of the organic component in the organic phase for the

Card 4/8

An investigation of the complex-formation ...

S/186/60/002/006/008/026
A051/A129

case, when the value of the product $K[H_2O]_0^m \ll 1$: $\varphi_1 = mK_0[H_2O]_{01}^m$,

$\varphi_2 = mK_0[H_2O]_{02}^m$. Dividing $\varphi_2$ by $\varphi_1$ and transforming to logarithms the following equation is derived:

$$m = \frac{\lg \varphi_2 - \lg \varphi_1}{\lg[H_2O]_{02} - \lg[H_2O]_{01}} \qquad (9).$$

where $[H_2O]_{01}$ and $[H_2O]_{02}$ are the equilibrium water concentration in the organic phase for various series of experiments. A similar principle is used to prove the formation of the BA $\cdot$ $H_2O$ compound in an aqueous solution. Using the relation

$$^{\lambda}H_2O = \frac{a_{(H_2O)_0}}{a_{(H_2O)_W}} ,$$

Card 5/8

An investigation of the complex-formation ....

S/186/60/002/006/008/026
A051/A129

$$\alpha_{BA \cdot H_2O} = \frac{^a(BA \cdot H_2O)_0}{^a(BA \cdot H_2O)_W},$$

$$\alpha_{BA} = \frac{^a(BA)_0}{^a(BA)_W}$$

where $^a_{H_2O}$, $^a_{BA \cdot H_2O}$ and $^a_{BA}$ are the distribution coefficient of the correspond-ing components, the following equation is derived:

$$\frac{\alpha_{BA \cdot H_2O}}{\alpha^m_{H_2O} \cdot \alpha^n_{BA}} K_B = \frac{^a(BA \cdot H_2O)_0}{^m(H_2O)_0 \; ^n(BA)_0} \qquad (10),$$

where $K_B$ is the equilibrium constant of $BA \cdot H_2O$ in the aqueous solution. If

Card 6/8

An investigation of the complex-formation ....

n - 1 and m - 1 as established above, it is concluded that a BA $\cdot$ $H_2O$ compound is formed in the aqueous solution, proven previously from the analysis of the general distribution equation (4). Combining (6) and (10):

$$K_B = K_0 \frac{\alpha_{H_2O} \alpha_{BA}}{\alpha_{BA \cdot H_2O}} \quad (11) \quad \text{or by another method:} \quad K_B = \frac{\frac{(\Sigma BA)_W}{[BA]_0} \alpha_{BA} - 1}{55.51} \quad (12)$$

and also

$$K_B = \frac{1}{55.51 \frac{(\Sigma BA)_W}{[BA \cdot H_2O]_0}} \quad (13)$$

If $a_{BA}$ or $a_{BA \cdot H_2O}$ are known, $K_B$ can be calculated. There are 2 tables, 4 figures and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. The references to the English language publications read as follows: Katzin, L; J. Sullivan,

Card7/8

An investigation of the complex-formation ...

S/186/60/002/006/008/026
A051/A129

J. Phys. collid chem., 55, 3, 346, 1951; R. A. Robinson a. R. H. Stokes, Trans. Farad. Soc., 45, 7, 612, 1949;  R. H. Stokes Tans. Farad.Soc., 44, 5, 295, 1948.

SUBMITTED:      January 20, 1960.

Card 8/8

AUTHORS:     Chaykhorskiy, A.A., Vdovenko, V.M., Yefimova, K.I.
and Belov, L.M.

TITLE:       On the Investigation of the Formation of Complexes in
Non-Aqueous Solutions.   III. The Determination of
Thermodynamic Characteristics of Systems: Water-
Tributylphosphate-Benzene and Water-Butylacetate-Benzene

PERIODICAL: Radiokhimiya, 1961, Vol.3, No.3, pp.295-301

TEXT:   The mechanism of the distribution of water between aqueous
and organic phases in the above systems was investigated
previously (Ref.6: V.M.Vdovenko, L.M.Belov, A.A.Chaykhorskiy,
Radiokhimiya, 1, 4, 439 (1959); and Ref.7: V.M.Vdovenko,
K.I.Yefimova and Chaykhorskiy, Radiokhimiya, 2,6,675 (1960) ).
It was then found that in aqueous and organic phases of the above
system, in the range of concentration of the organic component of
up to 10%, molecular compounds of the composition $TBPh \cdot H_2O$ and
$BA \cdot H_2O$  (TBPh-tributylphosphate;  BA - butylacetate) are formed.
On the basis of data on the distribution of water between the
phases, the equilibrium constants for the above compounds in the
organic phase at 20°C were calculated.   In the present paper the
Card 1/3

results of an investigation of the chemical equilibrium in the
organic phase of the above system at 6, 13 and 20°C are reported
and, on the basis of these data, complete thermodynamic
characteristics of the reaction of formation of TBPh·$H_2O$ and
BA·$H_2O$ as well as of the process of distribution of water between
water and benzene were calculated. The results obtained
indicated that the process of formation of complexes TBPh and BA
with water are exothermic, the values of enthalpies are practically
equal ($\Delta H° = - 3.84 \pm 4\%$ and $- 3.13 \pm 6\%$ k cal/mole for TBPh·$H_2O$
and BA·$H_2O$ respectively) while the isobar potentials differ by one
order ($\Delta ZT - 1.41 \pm 2\%$ and $0.0546 \pm 3\%$ kcal/mole, respectively)
which indicated that the stability of TBPh·$H_2O$ is higher than that of
BA·$H_2O$. The process of solution of benzene in water is endothermic
($\Delta H° = 5.19 \pm 6\%$ kcal/mole). The numerical value of the heat of
the solution of benzene in water is higher than the heat effect of
the reaction of the above complexes. Thus, despite the reaction of
formation of complexes being exothermic, the overall process of the
solution of water in a benzene solution of TBPh or BA remains
endothermic. There are 5 figures, 5 tables and 8 references:
4 Soviet-bloc and 4 non-Soviet-bloc. The four references to
Card 2/3

On the Investigation of ...

S/186/61/003/003/008/018
E071/E435

English publications read as follows:  E.Gluecauf, H.A.C.McKay and
A.R.Mathieson, Trans.Farad.Soc., 47, 5, 437 (1951);
A.W.Gardner and H.A.C.McKay, Trans.Farad.Soc., 48,12,1099 (1952);
H.A.C.McKay, Trans.Farad.Soc., 47,12,1103 (1952);
T.H.Siddell, J.Am.Chem.Soc., 81,16,4176 (1959).

SUBMITTED:    May 16, 1960

Card 3/3

VDO___, V.__.; G.___, __.Ya.; CHAYIHORSKIY, A.A.

Study of complexing in nonaqueous solutions. Part 5:
Hydration of trihexylamine nitrate in benzene. Radic'li in
3 no.4:448-454 '61.                                      (MIRA 14:7)

       (Complex compounds)
       (Amines)

CHAYKHORSKIY, A.A.

Complex formation in nonaqueous solutions. Part 6: Determination
of the degree of solvation by the method of polytherms. Radio-
khimiia 6 no.4:494-496 '64.                    (MIRA 18:4)

CHAYKHORSKIY, A.A.; NIKOL'SKIY, B.P.; MIKHAYLOV, B.A.

Complex formation in nonaqueous solvents. Part 7: Acetic acid
distribution between water and carbon tetrachloride. Radiokhimiia
7 no.5:572-575  '65.                                    (MIRA 18:10)

L 22247-66    EWP(k)/EWT(d)/EWP(h)/T/EWP(l)/EWP(v)    IJP(c)    GG/BB

ACC NR: AP6005851                SOURCE CODE: UR/0102/65/000/004/0044/0054

AUTHOR: Chekhovyy, Yu. M.--Chekhovoy, Yu. N. (Kiev); Kerekesner, I. P. (Kiev)

ORG: None

TITLE: Algorithms for teaching an open optimal control system to recognize situations correctly

SOURCE: Avtomatyka, no. 4, 1965, 44-54

TOPIC TAGS: algorithm, optimal automatic control, automatic control system, recognition process, teaching machine

ABSTRACT: In this article, the authors investigate the recognition of a situation in relation to the problem of automatic control of complex multidimensional controlled plants. The idea of utilizing the principles of recognition for the solution of this problem is due to O. H. Ivakhnenko (A. G. Ivakhnenko) (Pro pryntsypy pobudovy system, shcho navchayut'sya, keruvannya skladnymy protseamy, "Avtomatyka", no. 4, 1963; Samoobuchayushchiyesya sistem s polozhitel'nymi obratnymi svyazyami, Izd-vo AN UkrSSR, 1963). The authors propose an algorithm for a system for recognizing a situation, defined by regions of complex configuration. Two variations of a system teaching
Card 1/2

L 22247-66

ACC NR: AP6005851                                                    0

algorithm are studied.  Some results of simulation of teaching and recognition processes
are presented.  Orig. art. has: 6 figures, 6 tables, and 21 formulas.

SUB CODE: 09 / SUBM DATE: 25Oct64 /ORIG REF: 006

Card 2/2  nst

Kinetics and mechanism of the decomposition of hydrocarbons. III. Kinetics and mechanism of the decomposition of butane at low pressures in the presence of isobutene and propene as inhibitors. A. D. Stepukhovich and A. M. Chaĭkin (N. G. Chernyshevskiĭ State Univ., Saratov). Zhur. Fiz. Khim. 27, 1737–47 (1953); cf. C.A. 47, 6229h. —The kinetics of thermal decompn. of butane at pressures of 1–30 mm. Hg and the temps. 548 and 573° was studied by observation of the change of pressure with time of a given vol. of butane in a vacuum app. This decompn. is a self-inhibiting chain reaction involving free methyl radicals, as shown with the aid of traces of propene (I) and isobutene (II). II is a more effective inhibitor than is I under similar exptl. conditions; but both become less effective as the temp. rises. The reaction proceeds through 8 successive or concurrent steps; the rate const. for each step in the presence of I and II, resp., both at 548 and 573°, is calcd. by means of a given equation. Exptl. data are tabulated and plotted for the decompn. of butane as a function of time for the latter cases and at 573° without inhibitor.

J. W. Loveberg, Jr.

*Chaykin, A.M.*

# DETERMINATION OF THE THERMAL CONDUCTIVITY COEFFICIENTS OF GASES AND GASEOUS MIXTURES

*A. M. Oholkin* and *A. M. Markevich (Moscow)*

## Summary

A modified method has been proposed for determining the thermal conductivities of gases and of gaseous mixtures based on heat flow and temperature increase measurements in a cylindrical vessel along the axis of which is a heating element of special design. The method permits the thermal conductivities of a number of chemically active gases and of their mixtures to be measured at temperatures at which no reaction is taking place between the components. Values have been obtained for the thermal conductivity coefficients of $H_2/C_2H_4$, $Cl_2/HCl/C_2H_4Cl_2$, $CO_2$ and of the systems $H_2 + Cl_2$ at 20, 60 and 150° C, $H_2 + Cl_2$ (1 : 1) + HCl at the above temperatures and $C_2H_4 + Cl_2$ at 20° C. As illustrated by the case of $CO_2$ the values of the present study were shown to be in conformity with published tabular data.

Card 1/1

TITLE:    On the Role Played by the Surface in the Thermal Reaction of
Hydrogen With Chlorine

ABSTRACT:    In a paper by A. M. Markevich "The Role Played by the Surface
in the Thermal Reaction of Hydrogen With Chlorine" ("Rol'
poverkhnosti  v termicheskoy reaktsii vodoroda s khlorom")
(Ref 1) it was shown by the calorimetric method according to
A. A. Koval'skiy (Ref 2) that this reaction proceeded homo-
geneously in the gaseous phase and  represents a chain reaction
whose chains are formed at the surface of the reaction vessel.
Chapman and Cowling (Ref 3) demonstrated that in gas mixtures
with greatly differing heat conductivity of the components no
linear dependence of the coefficient of heat conductivity in
the mixture on the molar part of the components may be assumed
as was done by Markevich in the above-mentioned determinations.
In the present case more exact values of heat conductivity co-
efficients are used, and examinations are made as to whether
in the experiments made by Markevich hydrogen oxidation initiat-

Card 1/3

05813
SOV/76-33-10-11/45

On the Role Played by the Surface in the Thermal Reaction of Hydrogen
With Chlorine

ed by chlorine takes place. Experiments are made as to how
a change of the specific surface of the reaction vessel (S/V)
effects the rate of the reaction inhibited or not inhibited
by oxygen. The investigations were made in a device and by
methods corresponding to those by A. M. Markevich. All experiments
were made under static conditions with an equimolar chlorine-
hydrogen mixture at 286 C and a pressure of 115mm Eg with and
without oxygen addition. The reaction rate (Table 1) was de-
termined graphically from the kinetic reaction curve. The heat
conductivity coefficient of the mixture was determined from
the values of the components by a method by A. M. Chaykin and
A. M. Markevich (Ref 4) (Table 2, Fig 2). It was found to be
much lower compared to those mentioned above. Data on the re-
action kinetics of chlorine with hydrogen and 15% of oxygen
(Fig 1) as well as the calorimetric experimental and computa-
tion results are given. Results are in good agreement with
those obtained by Markevich. However, Q is not equal to 1 as
was assumed by Markevich, but 0.51, which may be explained
by the fact that the chains are interrupted not only at the
surface but also inside the vessel. This was confirmed by

Card 2/3    A. Trifonov's experiments (Ref 6). The observations described

05813
SOV/76-33-10-11/45
On the Role Played by the Surface in the Thermal Reaction of Hydrogen
With Chlorine

        here may be considered an additional proof of the reaction
        mechanism suggested by Markevich. There are 2 figures,
        3 tables, and 6 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
             (Moscow State University imeni M. V. Lomonosov)

SUBMITTED:   March 12, 1958

Card 3/3

CHAYKIN, A.M.; SHILOV, A.Ye. (Moskva)

Methods of feeding reagents into a low pressure gas stream.  Zhur.
fis.khim.  34  no.5:1140-1141  My '60.                    (MIRA 13:7)
         (Chemical apparatus)

32639
S/076/62/036/001/010/017
B124/B110

//. 2223

AUTHOR:        Chaykin, A. M.

TITLE:         Saturated vapor pressure and heat of sublimation of ethyl
               lithium

PERIODICAL:    Zhurnal fizicheskoy khimii, v. 36, no. 1, 1962, 130-131

TEXT:  The vapor pressure of ethyl lithium was measured using the effusion
method and the device shown in Fig. 1.  Glass test tube 1 was filled with
crystalline ethyl lithium 3 in an argon atmosphere and connected to the
miniature Dewar vessel 2 through a ground-in joint.  The face of the
ground-in joint bears brass plate 4 with an opening 2 mm in diameter.  The
whole device was connected to a vacuum installation and placed into a
TC-15 (TS-15) thermostat with a temperature control accurate to $\pm$ 0.05$^{\circ}$C.
Container 5 in vessel 2 was filled with liquid nitrogen.  In the chamber,
where ethyl lithium was vaporized, a vacuum of $5 \cdot 10^{-6} - 10^{-7}$ mm Hg was
maintained.  Ethyl lithium vapor formed in chamber 1 was passed through
the opening in plate 4 to chamber 2 and condensed in container 5.  After
60 to 1000 minutes (depending on the operating temperature) vessels 1 and

Card 1/3

32639
S/076/62/036/001/010/017
Saturated vapor pressure and...            B124/B110

2 were disconnected, and the condensed ethyl lithium decomposed with water containing some hydrochloric acid. Excess acid was titrated to determine the quantity G of ethyl lithium passed through the opening with the area S in time t. The vapor pressure in mm Hg was calculated from the equation

$$p = \frac{17.14\ G}{kSt} \sqrt{\frac{T}{M}},$$

where T = absolute temperature, M = molecular weight, and k = Clausing coefficient dependent on the ratio of the thickness d of membrane 4 to the radius r of the opening. In the setup used, d/r = 0.09, and, thus, k = 0.957. Measurements were performed at temperatures ranging from 25 to 60°C. No noticeable decomposition of $C_2H_5Li$ occurs under these conditions. The relation

$$\log p_{mm} = 16.28 - 6.09 \cdot \frac{10^3}{T}\ mm\ Hg$$

was derived using the method of least squares, from which the heat of sublimation of $C_2H_5Li$ was found to be $27.9 \pm 0.2$ kcal/mole. There are 2 figures, 1 table, and 2 references: 1 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows:

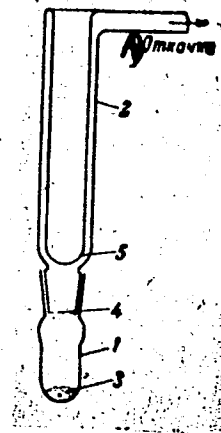Card 2/3

Saturated vapor pressure and...

G. E. Coates, Organo-metallic compounds, London, New York, 1956.

ASSOCIATION:  Institut khimicheskoy fiziki (Institute of Chemical Physics)

SUBMITTED:   May 8, 1960

Fig. 1.  Device for measuring
the vapor pressure of
ethyl lithium.

Legend:  (A) exhaustion.

Card 3/3

CHAYKIN, A.M.

Role of the vessel surface in the thermal reaction of chlorine
with ethylene. Zhur. fiz. khim. 36 no.6:1306-1310 Je'62
(MIRA 17:7)

1. Institut khimicheskoy fiziki AN SSSR.

40388
S/020/62/145/006/012/015
B106/B144

//. 2223
//. 1250

AUTHORS:     Lebedev, Yu. A., Miroshnichenko, Ye. A., and Chaykin, A. M.

TITLE:       Formation heat of ethyl and n-butyl lithium

PERIODICAL:  Akademiya nauk SSSR. Doklady, v. 145, no. 6, 1962, 1288 - 1289

TEXT:  The combustion heat of ethyl and n-butyl lithium was determined and
the formation heat was calculated from it.  Combustion took place in iso-
thermic calorimeters in an oxygen atmosphere.  The mean combustion heats
are:  ethyl lithium 415.4 $\pm$ 1.3 kcal/mole, butyl lithium 721.5 $\pm$ 1.7 kcal/
mole.  No noticeable amounts of $Li_2O_2$ or $Li_2CO_3$ were found in the combus-
tion products of ethyl lithium.  An analysis of the combustion products of
n-butyl lithium showed that combustion was complete.  Data on the formation
heat of the combustion products $Li_2O$, $H_2O$, and $CO_2$ (U.S. Nat. Bur. Stand.
Circ. no. 500. Selected Values of Chemical Thermodynamic Properties,
Washington, 1952) were used to calculate the formation heat of ethyl
lithium:  -14.0 $\pm$ 1.3 kcal/mole, and of n-butyl lithium: -32.0 $\pm$ 1.7 kcal/
mole.  The stability of the C-Li bond is calculated to be 47.5 $\pm$ 1.5 kcal/
mole in ethyl lithium and 55.5 $\pm$ 2.4 kcal/mole in n-butyl lithium,
Card 1/3

Formation heat of ethyl and ...

S/020/62/145/006/012/015.
B106/B144

assuming that lithium alkyls in gaseous state are monomolecular. The formation heat of atomic lithium (37.07 kcal/mole), and of the radicals $C_2H_5$ (24.3 kcal/mole) and $C_4H_9$ (12 kcal/mole), and the sublimation heat of ethyl lithium (27.9 ± 0.2 kcal/mole) required for this calculation, were taken from T. L. Cottrell (The Strength of Chemical Bonds, London, 1958), A. M. Chaykin (ZhFKh, 36, no. 1, 130 (1962)), N. N. Semenov (O nekotorykh problemakh khimicheskoy kinetiki i reaktsionnoy sposobnosti (Some problems of chemical kinetics and reactivity), Izd. AN SSSR, 1958)). The sublimation heat of n-butyl lithium (25.6 ± 0.7 kcal/mole) was calculated from the temperature dependence of the saturated vapor pressure between 60 and 95°C. Recently, ethyl lithium in gaseous state has been shown to consist of equal parts of hexamer and tetramer associates. For the final determination of the stability of the C-Li bond it is also necessary to substract the association heat of these compounds from the above-mentioned values. There are 2 tables. The most important English-language references are: P. A. Fowell, C. T. Mortimer, J. Chem. Soc., 1961, 3793; R. West, W. Glaze, J. Am. Chem. Soc., 83, no. 17, 3580 (1961); J. Berkowitz, D. Bafus, T. L. Brown, J. Phys. Chem., 65, no. 8, 1380 (1961).

Card 2/3

Formation heat of ethyl and ...

S/020/62/145/006/012/015
B106/B144

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: April 23, 1962, by V. N. Kondrat'yev, Academician

SUBMITTED: April 14, 1962

Card 3/3

VEDENEYEV, V.I.; CHAYKIN, A.M.; SHILOV, A.Ye.

Branching in chain reactions involving molecular fluorine.  Kin.i
kat. 4 no.2:320-321 Mr-Ap '63.                    (MIRA 16:5)

1.  Institut khimicheskoy fiziki AN SSSR.
(Fluorine)              (Hydrogen)      (Fluorine organic compounds)

KAPRALOVA, G.A.; TROFIMOVA, Ye.M.; RUSIN, L.Yu.; CHAYKIN, A.M.; SHILOV, A.Ye.

Experimental evidence for branching in chain reactions involving molecular fluorine. Kin. i kat. 4 no.4:653-654 Jl-Ag '63.

(MIRA 16:11)

1. Institut khimicheskoy fiziki AN SSSR.

CHAYKIN, A.M.

Generation of a high temperature in the resonator of a
paramagnetic resonance spectrometer. Prib. i tekh. eksp. 8
no.6:178-179 N-D '63.                                (MIRA 17:6)

1. Institut khimicheskoy fiziki AN SSSR.

L 12587-63      EPR/EWP(j)/EPF(c)/EWP(q)/EWT(m)/BDS   AFFTC/ASD   Ps-4/Pc-4/
Pr-4    RM/WW/JD
ACCESSION NR: AP3003225                      S/0020/63/150/006/1282/1284

AUTHOR: Kapralova, G. A.; Rusin, L. Yu.; Chaykin, A. M.; Shilov, A. Ye.

TITLE: Elemental reactions of molecular fluorine

SOURCE: AN SSSR. Doklady, v. 150, no. 6, 1963, 1282-1284

TOPIC TAGS: molecular fluorine, fluorine, hydrogen, carbon, frozen olefin, ethyle-
ne, divinyl, hydrogen iodide, luminescence, flame diffusion, methane

ABSTRACT: The great reactive capacity of molecular fluorine, as compared to other
halogens, is explained by its affinity for H, C, and metals, and the high energy of
its bonding with C, H, and Me (over 100 kcal/mol) accounts for certain features of
the reactions illustrated here, some of which involve the release of enormous
amounts of energy and may lead to chain reactions. The authors give the results
of their studies on the kinetics and mechanism of the 2 types of elemental reaction
shown in equations (1) and (2) of the Enclosure. At liquid $N_2$ temperatures,
type (2) reactions occur with the formation of free radicals by gaseous $F_2$ on
interaction with frozen olefins. Measured with a thermocouple vacuum gage to
determine the fall of $F_2$ pressure, the reaction was too fast for measurement
when ethylene and divinyl were used. With chloro-substituted ethylene, the
Card 1/3

L 12587-63
ACCESSION NR: AP3003225                                    $O$

reaction rate decreased. In detailed kinetic studies on trichloroethylene bound
to F sub 2, measurements of the surface size of the frozen olefin by the BET
method showed that the quantity of F sub 2 molecules taken up by the olefin at
-196C was almost identical to the number of olefin molecules at the surface; deeper
layers reacted only when the temperature was increased. The energy of the reaction
of C sub 2 HCl sub 3 was ca. 0.5 kcal/mol over the temperature range -196C to
-163C; thus for olefins with a smaller number of Cl atoms in the molecule,
especially ethylene, the energy of activation must be practically nil. Flame-
diffusion measurements of the reaction rate of molecular F sub 2 with gaseous
ethylene by Kistyakovskiy's method were made to study the reactions shown in
equations (3), (4), (5), (6) of the Enclosure. Although the energy of activation
was quite low, it was decidedly higher than in the surface reaction of F sub 2 with
olefins. The reaction of F sub 2 with hydrogen iodide was accompanied by distinct
luminescence, the spectrum corresponding to the known spectrum of excited FI*
molecules. With an excess of HI, the stable reaction products were molecular
iodine and hydrogen fluoride. Flame diffusion determination of the velocity
constants in experiments in which F sub 2 was added via a nozzle to a stream of HI
was compared with initial flame-diffusion heating under different flow conditions.
The good correspondence indicates that rate of luminescence and heat emission are
functions of the same process. Flame-diffusion studies showed little reaction

Card 2/4̵3̵

L 12587-63
ACCESSION NR: AP3003225

between F sub 2 and CH sub 4 or HCl under comparable conditions and these reactions were practically thermo-neutral, in contrast to the markedly exothermic reactions of F sub 2 with olefins and HI. These findings further confirm the close relationship between activation energy and thermal effect, which is evidently analogous to Polyani's law for radical reactions. The paper was presented by Academician N. N. Semenov on 21 Feb 1963. Orig. art. has: 2 figures and 6 equations.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 00          DATE ACQ: 24Jul63          ENCL: 01

SUB CODE: CH          NO REF SOV: 003          OTHER: 007

Card 3/4

L 57781-65    EPF(c)/EWP(j)/EWA(c)/EWT(m)    Pc-4/Pr-4    RPL    RM/JW

ACCESSION NR: AP5015587                    UR/0062/65/000/005/0800/0805
                                           547.024 + 536.7

AUTHOR: Kalashnikova, L.A.; Rozantsev, E.G.; Chaykin, A.M.

TITLE: Saturated vapor pressure of certain stable free radicals

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 5, 1965, 800-805

TOPIC TAGS: free radical, vapor pressure, nitrogen compound, hydroxylamine, nitroso radical, iminoxyl radical

ABSTRACT: The saturated vapor pressures of certain nitroso and iminoxyl radicals and their hydrides were determined for the first time. The apparatus used for measuring the vapor pressure is described. The vapor pressure was determined by the effusion method, using the formula

$$p = \frac{0.286 \, G}{KSt} \sqrt{T/M},$$

where G is the amount of substance in grams passing through the aperture in the membrane of the effusion cell. The values of G were found by analyzing the substances spectrophotometrically and polarographically. The heats of sublimation were calculated from the vapor pressure values obtained. It was found that the saturated vapor pressures of the

Card 1/2

L 57781-65

ACCESSION NR: AP5015587

free pressures of the free radicals were higher than those of the corresponding hydro-xylamines. Orig. art. has: 4 figures, 3 formulas and 3 tables.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences, SSSR)

SUBMITTED: 08Jul64         ENCL: 00         SUB CODE: GC

NO REF SOV: 005           OTHER: 007

Card 2/2

RUSIN, L.Yu.; CHAYKIN, A.M.; SHILOV, A.Ye.

Electron paramagnetic resonance spectra of halogen atoms in gas-phase branched chain reactions. Kin.i kat. 5 no.6:1121-1123  N-D
'64.                                                          (MIRA 18:3)

1. Institut khimicheskoy fiziki AN SSSR.

Chay kin, A. N.

CHAYKIN, A.N. (stantsiya Yeisk).

Tie loader device. Put' i put. khoz. no.10:5 0 '57.     (MIRA 10:11)

(Railroads--Ties)

CHAYKIN, A.N., inzh.

Improving labor safety. Put' i put.khoz. 7 no.7:37-38 '63.
(MIRA 16:10)

1. Starominskaya distantsiya puti Severo-Kavkazskoy dorogi.

KOROBOV, G.B.; CHAYKIN, A.S.

Unit for removing knots from felled trees. Biul.tekh.-ekon.inform.
Gos.nauch.-issl.inst.nauch.i tekh.inform. 17 no.1:63-66   '64.
(MIRA 17:2)

CHAYKIN, B.I.; PUSHKOV, V.G.; YERMILOV, V.S.

Introduction of new equipment in metallurgical enterprises of
the Central Ural. Biul. tekh.-ekon. inform. Gos. nauch.-issl.
inst. nauch. i tekh. inform. 17 no.6:3-6 Je '64.

(MIRA 17:11)

YERMILOV, V.S.; CHAYKIN, B.I.

Planning the technical and organizational development of an enter-
prise of nonferrous metallurgy (on the example of enterprises in
the Central Urals Economic Council). Izv.vys.ucheb.zav.; chern.met.
8 no.8:190-193  '65.                                            (MIRA 18:8)

1. Ural'skiy politekhnicheskiy institut.

CHAYKIN, F.

Accounting centralization at the First State Ball Bearings Plant.
Sots. trud 6 nc. ?:125 ¬¬¬ ¬ '61.                    (MIRA 14:2)

1. Zamestitel' glavnogo bukhgaltera Pervogo gosudarstvennogo
podshipnikovogo zavoda.
          (Moscow—Bearing industry—Accounting)
                    (Machine accounting)

CHAIKIN, I.I.

Experience with shop operations according to shift and hourly schedules. Avt.trakt.prom. no 12:3-4 D '54.    (MLRA 8:2)

1. Pervyy gosudarstvennyy podshipnikovyy zavod.
   (Production control)